THE DEMONSTRATOR;

BEING AN EXPLANATION

OF

THE DISSECTOR

OF

THE HUMAN BODY.

BY

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IN SIXTEEN PARTS.

PART I.

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deemed bold and adventurous, yet, if it be thought to give a promise of utility, he will venture to hope for some share of protection and patronage; or at least, that his ardent and laborious endeavours will be received with proportionate indulgence.

INTRODUCTION.

This work is confined to the Descriptive Anatomy of the Human Body, and as it attempts to elucidate that branch of knowledge by a novel method, will of course require some explanation of the plan by which it endeavours to attain its object.

All terms, anatomical, surgical, or scientific, here used, are to be received in the common acceptations, as deduced from the works of the most approved authors; and in the department of General Anatomy, the works in which their explication may be found are referred to in notes, and sometimes the very page of the author is mentioned; this is done to confine the Demonstrator to one thin volume, clear and comprehensive.

The several stages into which each part of the Dissector is divided are not always those which occur in actual dissection, for, although it may reasonably be said that there is only one stage in a dissection, still there are times when it is necessary to discontinue the examination of parts, until those which obstruct our view are cut off, and each of these is termed a stage; since the superjacent layer being removed, the next layer or stage is developed.

As frequent reference to superjacent, subjacent, or contiguous parts is unavoidable, and, that the particular part, or spot referred to, may be understood, the individual organs, or parts, whether arteries, veins, nerves, muscles, &c. &c. are numbered in small arabic figures, thus 1, 2, 3, &c., each series of such figures extending from the beginning to the end of each part of the work; and the stage in which the individual number is found being given in arabic numerals, thus (1st, 2nd,) the reader of the Demonstrator may instantly turn to the stage of the Dissector and become sure of the exact organ or part of an organ mentioned; these figures of reference being placed within parentheses, to distinguish them from those used to direct us to the individual organ under demonstration, thus,

1. Supinator Radii Longior, is to point out the supinator, which is the part particularly the object of description, but in explaining the origin of that muscle we find, (6th 78, *a*, *b*,) which directs us to the "6th" stage, at figure the ("78") being that attached to the Os Humeri, or bone of the arm, and the letters, (" *a*, *b*,") referring to the particular parts of the surface of that bone.

Thus we see that the *italic* letters *a*, *b*, point to a particular *part* of an organ; the *arabic figures*, 1, 2, to *an* organ; the *arabic numerals*, (1st, 2nd,) to a *stage*, in the dissection of a part of the *body;* and the roman numerals, I, II, V, &c. to another part of the *work*, rendering it impossible to misconceive the spot to which the Author especially refers, and this it is obvious is very important in anatomy.

The Author may add, that the parts *cut through* in the operations of surgery, may be discovered in this work, by forcing fine needles through the paper at the parts of the Dissector where the first incisions are usually made, should the subsequent ones be continued directly forward; and the parts injured by the puncture of a sharp instrument, as swords, &c. may be in the same manner observed.

It is also to be remarked, that this has lately become a favorite, and indeed a very effective, method of ascertaining the attainments of students in the ground-work of a very honorable and useful profession.

THE DEMONSTRATOR.

PART FIRST.

FRONT VIEW OF THE RIGHT FORE-ARM AND HAND.

Demonstration of Dissection, Stage 1.

In this Stage of the **Dissector** the subject has been deprived of the skin, or external tegument[*], the cellular substance[†], and the aponeurosis superficialis, or fascia[‡], except a small portion, by means of the scalpel, that the parts now exhibited might be exposed ; and it is to be borne in mind, that frequently in all the future Stages, much cellular substance or fat, and irregular fasciæ, besides those forming the sheaths to the arteries, veins, and nerves, and also the envelopes of muscles, and tendons, must be cut away, that we may distinctly see the more important parts. Those now to be Demonstrated, are

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[*] *Vide* General Anatomy, by Bichat ; or a Compendium by Bayle and Hollard, translated by Storer, 12mo. p. 211.

[†] *Ibid.* or Compendium, p. 1.

[‡] *Ibid.* or Compendium, p. 91.

MUSCLES.

1. **SUPINATOR RADII LONGIOR.** In describing this muscle, the appellation of the several portions of that class of organs will be given minutely, as a means of facilitating our future progress. This *arises* at *a*, (called its *origin*,) tendinous* and fleshy, from the ridge of the Os Humeri, (6th. 7. 8. *a. b.*) which terminates in the external condyle, (7. *g.*) commencing its attachment from nearly the middle length of that bone, and terminating it about two inches above the external condyle (as seen by the *dotted* line in the Diagram). It forms a thick muscular mass *b*, called the *belly*, which decreasing in size ends in a flat tendon *c*. This becomes rounder, and is

Inserted into the rough flat surface at the outer side of the extremity of the radius (6th, 82. *o.*) It is here cut off, that the lower portion may be distinctly seen in the next stage of the dissection.

Function, (or Use.) To roll the radius (6th, 82.) outwards, thus *supining* the hand, (that is, bringing the palm upwards, in the erect posture of the body), and when this is prevented to *flex* or bend, the fore-arm on the arm.

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* *Vide* Bichat, or Compendium, p. 91.

Syn. Supinator Longus, vel Major, &c.

2. **Pronator Radii Teres.** This *arises* at *e*, tendinous and fleshy, from the anterior surface of the internal condyle of the humerus. (6th, 80.) and the coracoid process of the ulna, (6th, 85.) it becomes a *round* fleshy mass, which, as is shewn, passes obliquely across the fore-arm and is

Inserted into a rough surface on the posterior part of the radius, (6th. 82. vide part II.*) at about its middle length.

Function, to roll the radius inwards, and thus *prone* the hand, that is, bring the palm towards the earth.

3. **Flexor Carpi Radialis.** This *arises* 1st. narrow and tendinous, (indicated by the dotted line) from the inferior and anterior part of the internal condyle of the os humeri, (6th, 80.) and is there covered by the last muscle; 2nd, fleshy from the fascia at *f*, 3rdly from the intermuscular ligaments†, and lastly from the upper end of the ulna, (6th. 84.) near the inter-

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* This refers to a future part of the work.

† *Vide* Bichat, or Compendium, p. 95 and 100.

nal condyle. (6th. 80.) From these four origins it forms a *thick* mass, terminating in a tendon, *g*, which passes under the annular ligament of the wrist, (2nd, 30.) where we now lose sight of it. It is

Inserted into the fore-part of the base of the index finger. (6th, 95. 1 *y*.)

Function. To flex the carpus or wrist and hand, and assist in pronation.

Syn. Radialis Internus.

4. PALMARIS LONGIOR. This

Arises tendinous from the internal condyle, (6th. 80.) at *h*, (as seen by the dotted lines,) and fleshy from the intermuscular fasciæ. It forms a short body, which transmits a slender tendon, attached at *i* to the annular ligament (2nd. 30.) and terminates, or is

Inserted into the fascia palmaris. (1st, 10.)

Function, to make the fascia *tense*, and assist in flexing the carpus or wrist.

Syn. Ulnaris Gracilis ; Palmaris Longus.

5. ABDUCTOR POLLICIS. This

Arises from the annular Ligament (2nd. 30.) at j, the os trapezium and os naviculare, (6th, 90 and 91.) and is

Inserted, tendinous, into the outer side of the root of the first phalanx of the thumb, (6th, 96.)

Function, to move the thumb from the fingers.*

6. PALMARIS BREVIOR. This

Arises from the annular ligament (2nd. 30.) and inner edges of the palmar fascia, (1st. 10.) and is

Inserted into the tegument or skin, and fat, covering the short muscles of the little finger.

Function, to assist in making the aponeurosis *tense*, and *contracting* the palm of the hand.

Syn. Palmaris brevis.

We also see the tendons of two of the long muscles of the thumb. (See Part II.) Their names are

7. EXTENSOR OSSIS METACARPI POLLICIS MANUS.

8. EXTENSOR PRIMI INTERNODII POLLICIS MANUS.

The word fascia†, or aponeurosis, has been several times used. Two parts bearing that name are now before us; the first is part of the

9. APONEUROSIS SUPERFICIALIS, sent off from the tendon of the *biceps*, (2nd. 20.) all the other portion, which completely invested the fore-arm, having been carefully dissected from

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* The portion of this muscle marked *k* is termed by Albinus *abductor brevis altor*, but is not always evident.

† *Vide* Bichat, or Compendium, p. 91.

beneath the superficial veins and nerves, which we shall presently demonstrate.

Function. To bind the muscles down to their respective places, and support them when in action, this effect being increased by the contraction of the *biceps flexor cubiti.* (2nd. 20.)

Syn. Fascia superficialis.

The second is the

10. **Aponeurosis Palmaris**, given off by the tendon of the palmaris longior (*l.* 4.) and as you may perceive, extending over the palm of the hand, and attached by bifurcated slips to the end of each os metacarpalis (95's. *z.*) and by sending down slips of fasciæ, to the whole length of those bones; thus dividing and affording sheaths to the flexor tendons (2nd. 21. jj. & 3rd 36. *gg.*)

Function. To keep the muscles and tendons in their places, its power being increased by the action of the palmaris longior. (1st, 4.)

Syn. Fascia palmaris.

We shall now proceed to the

Superficial Veins.*

11. **Vena Cephalica**, or Cephalic Vein, commences from the outer and posterior part of the fore-arm, (vide Part II.) and is here

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* *Vide* Bichat, or Compendium, p. 48.

seen coming round the *supinator radii longior*, (1st. 1.) to continue its course on the exterior side of the *arm*, until it ends in the auxiliary vein. (vide part III.) At the bend of the arm the cephalic vein communicates by means of the

12. **Vena Mediana Cephalica**, with the

13. **Vena Mediana Longior**, which arises from the back part of the hand, (part II.) and root of the thumb, (at 1st. *z*.) and is seen passing obliquely up the fore-arm, and receiving numerous branches, (many of the smaller of which are cut away,) terminates in the median cephalic, (1st. 12.) before-mentioned, and the

m. **Vena Mediana Basilica**, which passes up to the

14. **Vena Basilica.** This vein with the median cephalica, (1st, 12.) takes all the blood brought by the median vein. (1st, 13.) The basilic vein, begins at the back of the hand, by the *salvatella* from the little finger and other branches, and is now observed bending obliquely round the muscles on the inner side of the fore-arm, to unite at the bend of the arm with the deep seated veins at (*n*.) and become in the arm-pit, the auxiliary vein. (vide part III.)

There is also a small vein in the middle of the fore-arm, which joins the median basilic at (*m*.) it is called **Vena Mediana Minor**.

The *Function* of the preceding veins is to *return* the blood, which in circulating has become of a purple colour, (or, as it is termed, venous and carbonized,) *towards* the heart, thence to be sent to the *lungs*, to be there decarbonized or oxiginized, which changes the colour to crimson.

THE SUPERFICIAL NERVES*.

15. **NERVUS MUSCULO-CUTANEUS**, which is here distributed by means of several branches to the muscles, skin, and other parts. Its previous course will be seen in part III.

16. **NERVUS CUTANEUS INTERNUS**, which passing down, terminates in numerous branches in the skin and fasciæ which have been removed. Its previous course is in part III.

Obs.—Branches of this and the last-mentioned nerve, passing over the median cephalic (1st), and median basilic (1st) veins, from their liability of being wounded in bleeding, cause one of the dangers of that operation—trismus, or lock-jaw.

17. **NERVUS SPIRALIS**, this is the smaller branch of the nerve of that name, the division of which we shall presently see. (at 4th. 56.) It passes down at *o*, from beneath the *pronator radii teres*, (1st. 2.) and *supinator radii longior*, (1st: 3.) and continues its course, down the fore-

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* *Vide* Bichat, or Compendium, p. 155.

arm, along the outside of the radial artery, (1st, 18.) and just above the wrist passes outwards, under the tendons of the long muscles of the thumb, (1st. 7 and 8.) that it may arrive at the back of the hand (vide part II.); it also transmits *p*, a small branch which passes with the artery to the thumb.

There is one

ARTERY,

And its branches, to be demonstrated; it is,

18. **ARTERIA RADIALIS**, coming from under the *pronator radii teres* (1st, 2), and in very muscular subjects the *supinator radii longior* (1st, 1.) is seen passing down the fore-arm, between the last muscle and the *extensor carpi radialis* (1st, 3.), on the muscular and tendinous parts of the *flexor digitorum sublimis*, (2nd, 21.) and at the wrist dividing into (1st, *d*.) the branch which becomes the *arcus arterialis palmaris profundus* (4th, 55.) which is the principal one, and

q. **RAMUS VOLARIS**, or *superficialis volæ*, which sends off

r. **ARTERIA SUPERFICIALIS POLLICIS**, and many other branches, as you may see, principally to the palmar fascia. (1st, 10.)

Those other parts, imperfectly seen, will be noticed in the next demonstration, and the *lym-*

phatic vessels, commonly called the lymphatics, which perform the office of absorption, and are therefore sometimes termed the absorbents, being too minute to be preserved in the dissection of an healthy subject, are not given. They are well shewn in the plates of Mr. Hewson, and other more recent authors.

Demonstration of Stage 2.

The parts to be demonstrated in this stage of the dissection, are

MUSCLES.

19. **EXTENSOR CARPI RADIALIS LONGIOR.**

It *Arises* at *a*, from the external ridge of the humerus, (6th, 78.) just below the *supinator radii longior*, continuing its attachment down to the upper part of the external condyle of that bone. (6th, 79.) Its thick short belly ends in a flat tendon about the middle length of the radius, (6th, 82.) which passes obliquely round that bone at *b*, in a groove, to be

Inserted into the *posterior* and upper part of the metacarpal bone of the index or fore-finger. (6th, 97. 1.) Vide part II.

Function. To extend the carpus, and thus move the hand *backwards*, also to assist in flexing the fore-arm.

Syn, Radialis externus primus.

The lower end of the

20. **Biceps Flexor Cubiti**, also seen in part III. It is here observed

Inserted, at *c.* into the tubercle of the radius (6th, 83.) and giving off that tendinous expansion at *d*, which becomes the fascia superficialis of the fore-arm. (1st, 9.)

Function. To flex the fore-arm on the arm, and make tense the before-mentioned aponeurosis or fascia.

21. **Flexor Digitorum Sublimis**, which

Arises, tendinous and fleshy from the inferior part of the internal condyle of the humerus (6th, 83.) at *e*; tendinous from the lower edge of the coracoid process (6th, 85.) at *f*; at *g*, fleshy from the tubercle of the radius, (6th, 83.) and from the middle third of the outer edge of that bone at *h*, and *i*. These four origins send off a strong and thick muscular mass, terminating in four tendons, at j, which pass under the annular ligament of the wrist, (2nd, 30.) where they are connected with each other, by short and slender cross ligamentous threads; they diverge, become thinner and flatter, pass along the metacarpal bone, (6th, 95's) and first phalanx of each finger, (6th, 98.) at which part, *k*, *k*, *k*, *k*, but concealed by the small annular ligaments, each tendon is divided for the passage of one of the four tendons of the *flexor sublimis profundus*, (3rd, 36. *g*, *g*, *g*, *g*.) and passing downwards are

Inserted at *l*, *l*, into the upper and fore-part of the *second phalanx* (6th, 99.) of each finger.

Function. To flex the second joint or phalanx of the fingers.

Syn. Sublimis perforatus, &c.

22. FLEXOR OSSIS METACARPI POLLICIS MANUS, or *opponens pollicis*, which

Arises, broad and fleshy from the annular ligament of the wrist, (2nd, 30,) and from the os trapezium (6th, 90.) and os naviculare (6th, 86.) and is

Inserted, tendinous and fleshy into the anterior and inferior part of the metacarpal bone of the thumb. (6th, 94.)

Function. To bring the first bone of the thumb *inwards*.

Syn. Flexor primi internodii ; Semi-interosseus pollicis ; Antithenar.

23. FLEXOR PARVUS MINIMI DIGITI,

Arises, fleshy from the outer side of the os unciforme (6th, 93.) and from the annular ligament of the wrist, (2nd, 30.) where it is attached to the hook-like process of the unciforme ; (6th, 93. *x*.) and is

Inserted, at *m*, by a roundish tendon into the first phalanx or joint, of the little finger (6th, 98. IV.)

Function. To flex the little finger, and bring it in some degree towards the other fingers.

Syn. Abductor minimi digiti, Carpophalangeus minimi digiti. And

24. ABDUCTOR MINIMI DIGITI MANUS,

Which *arises*, fleshy from the os pisiforme, (6th, 29.) and the annular ligament, (2nd, 30.) at *n*, it sends off a tendon, passing under a small annular ligament *o*, of its own, and is

Inserted, into the inner side of the first phalanx of the little finger, (6th, 98. IV,) and a tendinous expansion which covers the posterior part of that finger. Vide part II.

Function. To draw the little finger from the rest.

Syn. Extensor tertii internodii minimi digiti Hypothenar minor; Carpo phalangeus, min. dig.

The ARTERIES, are

25. ARTERIA RADIALIS, or radical artery, which is here seen coming off from the brachial artery, (3rd, 40.) and passing under the superficial fascia of the fore-arm *d*, and on the tendon of the *biceps flexor cubiti*, (2nd, 20. *c*.) at *p* where it gives off

q. ARTERIA RECURRENS RADIALIS, which is directed upwards round the articulation to inosculate with the arteries of the arm. (vide part III.) The radial also gives off branches to the musles and other organs in the vicinity, and then dips under the *pronator radii teres*, (1st, 2.) to reappear as seen in the first stage. (vide 1st, 18.)

26. **Arteria Ulnaris**, is here observed arriving from between the *flexor sublimus*, (2nd,21.) and *flexor profundus*, (2nd,36.) inside the tendon of the flexor carpi ulnaris, (4th, 45.) marked *r* in the diagram. Here it gives off the *arteria dorsalis ulnaris*, which we shall again refer to. It then passes under a distinct band of the annular ligament, (2nd, 30.) and divides into

s. **Arteria Profundus Ulnaris**, which passes down with the nerve, and inosculates with the deep seated palmar arch (4th,54,); and

t. t. **Arcus Palmaris Superficialis**, or superficial palmar arch, which directing its course obliquely downwards, and then slightly upwards forms an arch, with the convexity towards the fingers, and thence gives off

u. **Arteria Superficialis Minimi Digiti**; the three

v. v. v. **Arteria Digitales**, which as you perceive, divide in the clefts between the lower ends of the metacarpal bones, (6th, 95. *z*.) into two branches, supplying the sides and ends of the fingers; and

w. **Arteria Pollicis Ulnaris**, which inosculates with the arteria pollicis of the radial artery, (4th, 54. *q*.) and terminates in many branches to the thumb. &c.

There are two large

NERVES.

27. **Nervus Radialis**, or the radial nerve, which is here just emerging from under the annular ligament (2nd, 30.); its previous course we shall see presently (3rd, 41.); it immediately divides into four branches, the first of which is,

x. **Nervus Pollicis**, and the other three

y. *y*. *y*. **Nervi Digitales Superficiales** which pass downwards towards the fingers with the arteries (2nd, 26. *v*. *v*. *v*.), and the two last divide in the same manner as the arteries to supply the inside of the index, and the outside of the middle, the inside of the middle, and the outside of the ring finger; the remaining three sides of the fingers being supplied from the

28. **Nervus Ulnaris**, or ulnar nerve, which we observe coming from between the bellies of the two flexors of the fingers, (2nd, 21. and 3rd, 36.) and on the inside of the ulnar artery, (2nd,

26.) it gives off a branch to the short muscles of the little finger, (2nd, 23, 24. 3rd, 39.) The

z. RAMUS PROFUNDUS ULNARIS, which passing between the muscles, becomes the *arcus nervosus profundus*, (4th, 59.) and the

NERVI DIGITALES, two nerves, the outer one of which divides, supplying the inner side of the ring and the outer side of the little finger, and the other passing directly to the inner side of the same finger.

You will please to observe, that at the apices of the fingers, the digital nerves divide into numerous ramnifications of a pulpy consistency, and interlaced by the minute branches of arteries and veins, are imbedded in cellular tissue, or fat.*

There is also a portion of the

29. NERVUS SPIRALIS, a continuation of which we saw in the first stage. (17, 17.) Its previous course will be shewn presently. (4th, 56.)

We will conclude this demonstration by describing the

LIGAMENTS,

Which now present themselves.

30. LIGAMENTUM ANNULARE CARPI ANTI-

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* *Vide* Bichat, or Compendium, p. 48.

CUM, or anterior annular ligament of the wrist. It is very strong, and

Arises from the os pisiforme, (6th, 89.) and os unciforme, (6th, 93.) and is

Inserted into the os naviculare, (6th, 86.) and os trapezium, (6th, 90.) but stretches round and is attached to the surface of the capsular ligament (5th, 66.) so that its fibres interlace with the *ligamentum annulare posticum.* (part II.)

Syn. Lig. carpi transversale, vel internum.

31's. **LIGAMENTI ANNULARES PHALANGUM,** or annular ligaments of the joints of the fingers. They are divided into A primi, B secundi, (cut off, but seen in the last demonstration,) and C tertii ; they are little more than condensations of the sheaths (Vide 1st 10.) which envelope the tendons of the flexors of the fingers, (2nd 21, 3rd 35) that have been removed that the tendons of those muscles might be shewn.

Function. To bind down the tendons, which they in part surround, often acting as pullies, or fulcri, and always preserving the symmetry of the part.

We shall now proceed to the demonstration of the

THIRD STAGE.

In the third stage of this dissection we shall demonstrate the following

MUSCLES.

32. **BRACHIALIS INTERNUS**, which

Arises from the humerus (6th 78, as will be seen in part III.) and is here found terminating its fleshy belly in a flat tendon, which is

Inserted at *a* into the rough surface at the end of the under part of the coracoid process of the ulna. (6th 85)

Function. To flex the fore-arm on the arm.

33. A portion of the triceps which we shall describe at some future time. Vide part IV.

34. **EXTENSOR CARPI RADIALIS BREVIOR.** This

Arises from the posterior and inferior part of the external condyle of the humerus (6th 79) and the external lateral ligament (5th 61); its muscular belly is shorter than that of the Ex. Carp. Rad. Longior, (2nd 19.) but pursues the same course, and is

Inserted into the back of the metacarpal bone of the index or fore-finger. (6th 95 1.) Vide part II.

Function. To extend the carpus, and consequently the hand.

Obs. This muscle will be better seen, and appear larger, in the back view.

Syn. Radialis externus brevior : Epicondilo-super-metacarpeus.

35. FLEXOR LONGIOR POLLICIS MANUS.

Arises at *b*, acute and fleshy from the radius (6th. 82) immediately under the tubercle (6th, 83) and at *c, c,* from the outer edge and anterior surface of that bone, till within two inches of its inferior extremity. Also from the external part of the interosseous ligament. (5th 64 *ms*) *Generally* it also arises tendinous from the internal condyle of the humerus (6th 80) at *d*, which you see in this subject. This last origin becomes a small muscular belly, and is affixed to the upper portion of the muscle, the fibres of which principally pass obliquely forwards and inwards into a flat tendon ; this becomes round, and is

Inserted into the last phalanx or joint of the thumb, (6th 97) as will be seen in the next demonstration. (4th 47)

Function. To bend the thumb.

Syn. Radialis externus brevior : Radialis secundus.

36. FLEXOR DIGITORUM PROFUNDUS PERFORANS,

Arises, fleshy from between the coracoid process (6th 85) and the olecronon (part II.) on the inside of the ulna (6th 84) at *e*, and from the former process down the whole anterior face of two thirds the length of that bone, and the half of the interosseus ligament. (5th 64 *ls*) These origins give off a thick muscular mass, terminating in four flat tendons *gs*, which pass under the annular ligament, (2nd 30) and are

Inserted into the anterior, and superior part of the *third* phalanx of the fingers, (100) at *h*'s. *Obs.* The dotted line in the diagram indicates the limits of this muscle.

Function. To flex the last joint of the fingers.

Syn. Flex. profundus perforans: Profundus perforans: Cubito-phalangeus communis.

N. B. The tendons of this muscle just as they diverge from the annular ligament, (2nd, 30.) give off small tendinous bands, which are attached to the *Lumbricales.* (3rd, 38.)

37. FLEXOR BREVIOR POLLICIS MANUS

Arises, by two distinct heads. The 1st. or outer, from the posterior surface of the anterior annular ligament (2nd, 30.), and the anterior surface of the trapezium (6th, 90,) and os trapezoides (6th, 91.) at *i*, and is

Inserted into the outer sesamoid bone at *j*.

The 2nd. or inner head, from the os magnum (6th, 92.) and os unciforme (6th, 93.), extending some distance beneath the tendons of the perforans (3rd, 36.) (as is shewn by the dotted line in the diagram,) and the root of the metacarpal bone of the middle finger (6th 95 II *y*.), and is

Inserted into the inner sesamoid bone at *k*.

Function. To flex the thumb, being assisted in that office by the flexor longior (3rd, 35.). It acts solely on the first joint.

Syn. Flexor brevis pollicis manus.

Obs. The sesamoid bones are small and roundish, serving as a sort of pulley to extend the arc of motion, being attached to the metacarpal bone of the thumb (6th 94.) by ligaments, and are therefore cut off with the above muscle after it has been dissected.

38s. **Lumbricales**, four in number, which

Arise by tendinous bands from the outside of the tendons of the flexor perforans (36.), as we remarked when demonstrating that muscle. They have small muscular bellies, and each is

Inserted, by small tendons to the tendinous expansion*, which covers the back part of the fingers (vide part II.) about the middle joint, the tendons passing round the outer side of the fingers.

Function. To bend the first phalanx of the fingers (98s), the flexor perforans (36) being previously in action.

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* Parts of the above-mentioned tendinous expansion are seen in this dissection, as indicated by these marks, x

39. **Adductor Metacarpi Minimi Digiti Manus**, which

Arises fleshy, from the os unciforme (93.) and the annular ligament of the wrist (30.) (the last origin being shewn cut off,) and is

Inserted, tendinous, into the anterior part of the metacarpal bone of the little finger (6th, 95 IV.), at the spot *l.*

Function. To bring the metacarpal bone of the little finger *towards* the others, and to *flex* it.

Syn. Metacarpeus: Carpo-metacarpus minimi digiti : Flexor primi internonodii mini midigiti.

ARTERIES.

The **Arteries** next claim our attention. They are

40. **Arteria Brachialis**, or **Humeralis**, (vide part III.) which is now shewn resting on the brachialis internus (3rd, 32.), and a portion of the triceps (3rd 33.) (which is one of the posterior muscles of the arm). At the bend of the arm, generally on the tendon of the former muscle*, it divides into

m. **Arteria Radialis**, or the radial artery

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* The brachial artery (40.), *sometimes* divides into the arteries of the fore-arm (3rd, 41, 2nd 25,), some distance up the arm, even occasionally near the auxilla or arm-pit.

(see 2nd 25, and 1st. 18.), and the ulnar artery mentioned beneath (3rd, 41.).

Commonly, at about three or four inches before the brachial artery (3rd, 40.) divides, it gives off

n. RAMUS ANASTOMOTICUS MAGNUS, besides many other small ramnifications about the joint of the elbow.

41. ARTERIA ULNARIS, or ulnar artery, the inner branch of the brachial (3rd, 40.). It gives off two branches, which sometimes come from the ulnar in one branch, and then divide. They are

o. ARTERIA INTEROSSEA POSTERIOR, (4th, 52.) which will be demonstrated presently, and

p. ARTERIA INTEROSSEA ANTERIOR, which will be again adverted to, when its course and distribution will be given (vide 4th 53.). The ulnar artery then passes downwards supplying the muscles, &c. with many small nutritive branches ; also a large branch, called

q. RAMUS RECURRENS ULNARIS, which piercing or going round the flex. dig. profundus (3rd, 36.) and giving a branch to that organ, is directed upwards and backwards, anastomosing with branches sent off by the brachial artery (3rd, 40.) the principal of which is the ramus anastomoticus magnus (3rd 40,*n*).(vide part III.)

Lower down the main artery transmits

r. **Arteria Posterior Ulnaris**, (vide part II.) which passes between the ulna (6th, 84.) and the tendon of the flex. carp. ulnaris 4th, 45.), and being directed backwards divides into many branches, which are distributed on the back of the fore-arm.

s. Is a large branch to the muscles. It is not necessary for *me* to describe the course of the ulnar artery; — we now observe it cut off at the part where it became visible in a former demonstration (vide 2nd, 20.). I shall conclude this Stage by describing the

Nerves

Which are exposed. They are,

42. **Nervus Radialis**, or Radial Nerve, this part of the course of which, I beg you attentively to observe. Its branches are

t. One anastomosing with one of the two branches of the spiralis (55.), to form by their union the interosseus nerve (56.), which we shall exhibit in the next stage; and several to the muscles (32, 35, 36.), &c. in its vicinity, the largest of which are preserved in the dissection. The termination of this nerve in the hand and its distribution, was seen as you may remember at the last demonstration, as in that part of its course it is nearly superficial (vide 2nd 27.).

43's. **Nervus Ulnaris**, or ulnar nerve, which is very remarkable in its course; for, after passing down the arm with the other large nervous trunks, it separates from them near the internal condyle of the humerus, (80) and at *u*, proceeding behind, and on the inside of that process, in a groove which will be seen in the back view, part II. and then turning forwards between the heads, or sometimes fibres of the Flex: Carp: Ulnaris (45), and Flex: Digit: Profundus (36), it re-appears at *v*, anteriorly, and is directed down the fore-arm, in company with the ulnar artery, lying between the flexores sublimis, and profundus (21. 36.); in this part of its course, giving off many small branches to the muscles (21. 36.), &c. in its vicinity, besides a large branch, called

w. **Nervus Posterior Ulnaris**, (58.) which supplies the back part of the fore-arm, and hand. (See part II.)

FOURTH STAGE.

We have now nearly denuded the bones, except one; the remaining

Muscles are

44. **Supinator Radii Brevior**, which

Arises at *a*, *a*, from the lower portion of the external condyle of the humerus (6th, 79), from the posterior and superior part of the ulna (6th, 84; vide part II. Stage 4th.) and at *b*, *b*, from the capsular ligament of the elbow joint (5th, 60); and is

Inserted at *e*, into the tubercle of the radius (6th, 83), and downwards, to a rough spine which proceeds from that process to the upper and outer edge of that bone, thus surrounding and concealing the outer side of the joint.

Function, To revolve the radius (6th, 82) *outwards*, and thus contribute to supine the hand. It also prevents the capsular ligament (5th, 60) being pinched, and injured between the radius, (6th, 82) and humerus (6th, 78).

Syn. Supinator Brevis vel Radii Brevis; Epicondilo-Radialis.

45. Flexor Carpi Ulnaris.—[This muscle is generally demonstrated with the superficial ones (1st, 1, 2, 3), but from its position not being then so perfectly exposed it is given here.] It

Arises at *e*, tendinous from the lower portion of the internal condyle (6th, 80); tendinous and fleshy from the inner side of the *processus olecronon* of the ulna (vide part II.), which is a protuberance situate precisely behind the coracoid process of that bone; and tendinous from the posterior ridge of the ulna (6th, 84), to nearly the end of that bone, as seen in the posterior view. From these three origins the fibres pass obliquely forwards into a tendon, which is

Inserted, into the os pisiforme (6th, 89); and frequently, as in this instance, extending its fibres over a ligament, into the base of the metacarpal bone of the little finger, (6th 95, IV. *y*) at *f*.

Function. To flex the carpus, or wrist, and thus the hand; and, acting simultaneously with the extensor carpi ulnaris, (vide part II.) to bend the hand *inwards*, or towards the side.

Syn. Ulnaris Internus: Cubito-Carpeus.

46. PRONATOR RADII QUADRATES, which

Arises from *g* to *g*, tendinous and fleshy, broad and thin, from the inner edge of nearly all the lower end of the ulna (6th, 84), thence its muscular fibres run transversly, inclining downward, adhering to the inter-osseous ligament (5th, 64) and terminating in a flat tendon,

Inserted, from *h* to *h*, into the inferior, and anterior part of the radius (6th, 82).

Function. To revolve the radius (6th, 82) *inwards*, and thus *prone* the hand.

Syn. Cubito Radialis.

47. The Tendon, and some Muscular fibres of the

Flexor Longior Pollicis (3rd 35.) which we can now trace, passing downwards, through a groove in the bones of the carpus, and along the anterior surface of the metacarpal bones of the thumb, (6th 94, 96, & 97.) at the flexions of which are *i*, *i*, small annular ligaments to confine it, and is

Inserted at *j*, into the last bone of the thumb (6th 97.).

48. The tendon of **Flexor Carpi Radialis**, indicated by the dotted line, and

Inserted, at *k*.

49. **Abductor Pollicis Manus**; which

Arises at *l*, *l*, from almost the whole length of the metacarpal bone of the middle finger; (6th 95 II.), the muscular fibres converge and end in a tendon, at *m*.

Inserted at *n*, into the internal surface of the root of the first phalanx, or joint of the thumb, (6th 94, y.).

Function. To adduct the thumb, *i. e.* bring it *towards* the fingers.

The Interosseous muscles remain to be demonstrated. They are seven in number, but only four, termed *Interni* or *Palmares* are now to be noticed: the others called, *Bicipites*, *Externi*, or *Dorsales*, indicated by 50s, are better seen in the view of the posterior part of the fore arm and hand, (part II.)

51's. INTEROSSEI INTERNI are the

1st, 51, *o*, *Prior Indicis* which

Arises from the radial side of the metacarpal bone of the index finger (6th 95 I), and is

Inserted into the same side of the first phalanx or joint, (6th 98, I) of the same finger.

Function. To abduct the fore finger or bring it *from* the other fingers.

2nd 50 *p*, *Posterior Indicis* which

Arises from the ulnar or inner side of the metacarpal bone of the fore finger (6th 95 1.), and is

Inserted into the same side of the first joint of that finger.

Function. To carry the index finger towards the other fingers.

3rd. 50 *q*. *Prior Annularis,* which

Arises from the outer, or radial side of the metarcapal bone of the ring finger, (6th 95, III.), and is

Inserted into the same side of that finger at its first phalanx.

Function. To bring the ring finger from the little finger, and towards the other two.

4th, 50 *r*. INTEROSSEUS ARTICULARIS, which

Arises in the same manner from the radial side of the metacarpal bone of the little finger (6th, 95, IV.) and is

Inserted, into that side of the first phalanx.

Function. To draw the little finger towards the others, thus assisting the Adductor Minimi Digiti Manus (2nd 23.)

All the above small muscles are also inserted into a tendinous expansion given off by the tendon of the Extensor Communis Digitorum Manus, (vide part II.), attached to the back part of the phalanges of the fingers.

We now come to the ARTERIES, which are

52. ARTERIA INTEROSSEI POSTERIOR, given off by the ulnar artery (6th 41, *o*,) and now proceeding through an aperture in the interosseous ligament (5th 64) to the back part of the fore arm. We shall find it in the dissection of that part (part II.).

53. ARTERIA INTEROSSEI ANTERIOR, which is derived from the ulnar artery, (6th 41 *n*.), just after the above-mentioned branch, and is now observed running downwards on the interosseous ligament, (5th 64), giving off many branches in its course, and ending in ramnifications on the Pronator Radii Quadratus, (4th 46) the capsular ligament of the wrist, (5th 65,) &c.

54. ARTERIA ULNARIS POSTERIOR, (3rd 41, *r*), now seen running close to the ulna, (6th

84), and under the tendon of the ulnaris internus, (4th 45), to the back part of the fore arm. (Vide part II.)

55. **ARCUS PROFUNDUS ARTERIOSUS** or *Radialis*, which is a continuation of the trunk of the radial artery (1st 18), seen in the first stage of this dissection; it passes behind the metacarpal bone of the thumb, (6th 94), &c. and is thus concealed from our view.—We now perceive it coming from that position, having pierced the abductor indicis, (5th 77), and proceeding across the palm of the hand, on the roots of the metacarpal bones of the fingers, (6th 95, *y*), it sends off the following branches.

1st. **ARTERIA MAGNA POLLICIS**, the course and ramnifications of which you perceive

2nd. **ARTERIA RADIALIS INDICIS**, and

s, *s*, *s*. **ARTERIÆ INTEROSSEÆ PALMI**, three branches terminating in branches to the interossei muscles and palm, (4th 50&51). The

NERVES

To be noticed, are

56. **NERVUS SPIRALIS**, (the course of which in the arm, will be given in the dissection of that part,) is now observed bending round the external condyle of the humerus (6th 79), and then, descending on the supinator radii brevis (4th 44), and dividing into

t, The posterior, or principal branch, which pierces the muscular fibres of the supinator(44), as you see, reappearing in the dissection of the back part of the fore arm, (vide part II): and

u, The branch which we before demonstrated (1st 17), passing down the arm on the outside of the radial artery, (1st 18, 2nd 25), but which here sends off a branch marked with a x, uniting with the following nerve.

57. **Nervus Interosseus**, transmitted by the radial nerve, (3rd 42 *t*,) descends on the outer side of the anterior interosseous artery (4th 53), and gives branches to all the parts supplied by that vessel.

N. B. The branch from the spiralis (4th 65) is not always present.

58. **Nervus Dorsalis Ulnaris**, which we saw before coming from the ulnar nerve, (3rd 43, *w*), and passing with the dorsalis ulnaris artery (4th 54) to the back part of this extremity.—The last nervous branch is the

59. **Arcus Nervosus Palmaris Profundus**, or *Ulnaris*, which comes off from the ulnar nerve, (2nd 28, *z*,) and piercing the adductor minimi digiti (3rd 39), is now observed sending a branch to the back of the hand, and then forming the arch which you may observe running over the roots of the metacarpal bones of the fingers (6th 95, *y*) ; transmitting

w. Branches to each of the *interossei* (4th 50, & 51), the same to each of the Lumbricales, (3rd 38,) entering from behind.

x. Branches to the Flexor Brevis, (3rd 37,) and adductor pollicis, (4th 49), and then terminates in the abductor indicis, (5th 77.)

FIFTH STAGE.

Having removed all the parts last demonstrated we come to those

LIGAMENTS *

which lay close to the bones, they are

60. LIGAMENTUM CAPSULARE CUBITI, or Capsular Ligament of the elbow, which surrounds that joint, the upper part or edge being attached to the rugged boundary of the articulating surface of the Condyles of the Humerus, (6th 81) and the lower margin to the circumference of the sigmoid cavity of the ulna (6th 84), and the button like head of the Radius, (6th 82,*i*).

Function. To preserve the above-mentioned articulating surfaces in apposition, and allow a ginglimoid or hinge-like motion between the bones ; it being prevented, in any other direction by the two ligaments following.

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[*] Bichat or Compendium, by Bayle and Hollard, p. 90 and 95.

61. **Ligamentum Laterale Externum Cubiti**, or external lateral ligament of the elbow, which

Arises at *a* from the external condyle of the Humerus (6th 79), through its course being intimately attached to the capsular ligament, (5th 60), and is

Inserted at *b* just below the button-like head of the radius, (6th 82, *i*)

Function. To prevent lateral motion, particularly *inwards*

Syn. Lig. brachio-radiale.

62. **Ligamentum Laterale Internum Cubiti**, or internal lateral ligament of the elbow-joint; which

Arises at *c* from the internal condyle of the humerus, (6th 80,) is attached and almost part of the capsular ligament, (5th 60) and is

Inserted at *d* into the inner side of the ulna (6th 84) just beneath the internal sigmoid cavity, (vide Demonstration 6th, 85).

Function. To preclude lateral motion, especially *outwards*.

Syn. Ligamentum brachio-ulnare.

63. **Ligamentum Coronare Radii**, or the coronary, annular, or orbicular ligament of the radius (6th 82), which

Arising at *e* from the fore-edge of the lesser sigmoid cavity of the ulna (6th 84, *r*), passes round the button-like head of the radius, (6th 82, *i*), and is

Inserted into the posterior edge of the same cavity, this portion being extremely dense and firm, its upper edge being blended with, and nearly forming part of the capsular ligament, (5th 60), and its lower margin attached to the whole circumference of the radius, (6th 82), extending lower down than its tubercle (6th 83).

Function. To allow of the *rotation* of the radius (6th 82) on the ulna (6th 84) and also preserve the head of the former in apposition with the external condyle of the humerus, (6th 79) ; these ligaments are strengthened by

h, *Ligamentum Accessorium Anterius Cubiti*, or the anterior accessary ligament of the elbow ; its attachments are obvious, and its

Function, to prevent rotation outwards, and consequently supination proceeding too far.

i, *LigamentumAccessoriumRadii*, or accessory ligament of the head of the radius. The origin and insertion of which are as evident, but its

Function, which is similar, much more influential. And

k. *ChordaTransversalisCubiti*, which stretches from the coronoid process of the ulna (6th 85) to the radius below its tubercle, (6th 83) and is part of

64. **Ligamentum Interosseum Cubiti**, or interosseous ligament of the fore-arm, which is attached to the external rough surface of the ulna, (6th 84, *u*,) at *l*, *l*, *l*, and the inner sharp edge of the radius, (6th 82, *l*,) at *m*, *m*, *m*, its fibres running from above, obliquely downwards and inwards, and filling up the space between the two bones, except at the upper portion.

Function. To afford a broad surface for the origins of muscles, and to support vessels and nerves. It also assists in confining pronation and supination within due bounds.

Syn. Ligamentum cubito-radiale.

65. **Ligamentum Capsulare Radii**, or the capsular ligament at the lower end of the ulna, (6th 84, *v*,) which

Arises from both the margins of the semilunar cavity, at the inferior termination of the radius (6th 82, *n*) passes round the button-like end of the former bone, and its edges are

Inserted above, superior to the button-like head, and below into, and is, in fact, a part of the general capsular ligament, which we shall demonstrate next.

66. **Ligamentum Capsulare Carpi**, the capsular ligament of the wrist. It

Arises from the edge of the glenoid, or navicular cavity at the lower end of the radius (6th 82, *p*), and from the triangular cartilage of the ulna, and surrounding the joint, is

Inserted into the os naviculare (6th 86) os lunare (6th 87) and os cuneiforme (6th 88)

Function. To preserve the apposition of the articulating surfaces, assisted by the lateral ligaments ; but allowing a *rotátory* motion.

67. **LIGAMENTUM LATERALE EXTERNUM CARPI**, or external lateral ligament of the wrist, which

Arises from the styloid process of the radius (6th 82, *q*), is intimately connected with the capsular ligament of the wrist (5th 66), and is

Inserted into the os naviculare (6th 86).

Function. To strengthen the capsular ligament (5th 66) and restrain the *rotation* of the wrist *inwards*.

68. **LIGAMENTUM LATERALE INTERNUM CARPI**, or internal lateral ligament of the wrist, which

Arises from the styloid process of the ulna (6th 84, *w*), proceeds forward and downward firmly adherent to the capsular ligament, and is

Inserted into the os cuneiforme (6th 88) and os pisiforme (6th 89).

Function. To assist the capsular ligament (5th 66), and check the *too* great rotation of the wrist *outward*.

N. B. Rotation of the wrist is not nearly so extensive as the gliglimoid motion in that joint; it is, in fact, very imperfect.

69. LIGIMENTI CRUCIALES CARPI, et LIGIMENTI CAPSULARES CARPI; or crucial and capsular ligaments of the carpus. The latter unite the eight bones of the carpus, (6th 86, 87, 88, 89, 90, 91, 92, and 93) in every direction; are strictly capsular ligaments, and are strengthened very considerably by the former, disposed as their name indicates, in a crucial direction on the surface, and firmly attached to the latter.

70. LIGAMENTUM CAPSULARE METACARPI POLLICIS, or capsular ligament of the metacarpal bone of the thumb (6th 94) uniting it to the os trapezium (6th 90), much assisted in power by its

n. Lateral Ligaments, one of which is not seen, being situate behind, (vide part II.)

71. LIGIMENTI CAPSULARE, ET LATERALES PRIMI INTERNODII POLLICIS. These are like the last, a capsular, and *o*, two lateral ligaments of the *first* joint of the thumb.

72. LIGIMENTI CAPSULARE ET LATERALES SECUNDI INTERNODII POLLICIS, or the capsular, and *p*. the two lateral ligaments of the *second* joint of the thumb.

73's LIGIMENTI CAPSULARIA OSSIUM METACARPIUM, that is capsular ligaments of the bases of the metacarpal bones, (6th, 97) uniting them to three of the lower, or second row of carpal bones, (6th 91, 92, 93), and they are firmly, interwoven with, and form the superior portion of

q's. LIGIMENTI INTEROSSEI METACARPIUM OSSIUM, (6th 95), or interosseous ligaments of the metacarpal bones, which extend to

74's LIGIMENTI CAPSULARIA ET LATERALIA PRIMI PHALUNGIS MANUS, or capsular and *r*'s lateral ligaments of the first phalanx, or joint of the fingers, articulating the lower ends of the metacarpal bones (97), with the bases of the 1st phalanx of the fingers; the former are prevented from being seperated laterally by the

s, *s*, *s*. LIGIMENTI TRANSVERSALIA METACARPI, or three transverse ligaments of the metacarpus.

75, and 76. The second and third phalanges, or joints of the fingers, are also articulated by *t*, *capsular*, and *u*, *lateral ligaments*, as the first joint.

There is an ARTERY, which is part of

77. ARTERIA INTEROSSEA ANTERIOR CUBITI, or anterior interosseous artery of the

fore-arm, demonstrated in the last stage, (4th, 53), and here observed adhering to the interosseous ligament, (5th 64), and at *v*, passing through an aperture in it to the back part of the wrist, (vide part II). We have also a

MUSCLE, the

77.* ABDUCTOR INDICIS, which

Arises at *w*, from the os trapezium, (6th 90), and the upper and inner side of the metacarpal bone of the thumb, (6th, 94, *y*,) and is

Inserted at *x* by a short tendon into the outer and posterior part of the first phalanx of the index, or fore finger, and also into the tendinous expansion on the back of that finger. (vide note after 50.)

Function. To carry the fore-finger from the others.

STAGE SIXTH, OR LAST.

We shall now demonstrate the

BONES

of the fore-arm and hand, having perfectly deprived them of their periosteum* and pericrondrium.†

78. OS HUMERI, or the bone of the arm, of

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* Compendium, p. 103. † Compendium, p. 105 & 123.

which we find it necessary at present to mention the lower portion only. We observe

79. **Condylum Externum**, the external condyle. Its

Form is *a*, a spine or ridge, terminating in a large protuberance, *b*, and its

Use is to increase the surface for the articulation of the elbow, (81), and for the origins of the *extensor* muscles of the hand and fingers, (vide part II), and the supinators, (1st 1 and 4th 44).

80. **Condylum Internum**, or internal condyle of the humerus. Its

Form like the last mentioned part, but larger, and its

Use is the same, except that the powerful flexor muscles of this part arise from it.

81. **The Articulating Surface** at the lower end of the humerus, (6th, 78) : its general direction is oblique, as on drawing the line, *c*, you will perceive. The *inner portion* articulating with the ulna, (6th, 84), is *formed* of *d*, a large internal, and *e*, smaller external, ridge, running from before backwards, which together form a sort of pulley.

The Outer Portion, *f*, in form is round every way, some part of which is always in apposition with a depression in the button-like head of the radius, (6th, 82, *i*).

Immediately above the inner division of the articulation is a depression, *g*, to receive the coronoid process of the ulna (6th, 85), when the arm is bent, and by its outer side is a smaller and less deep pit, *h* for the button-like head of the radius, (6th, 82, *i*).

The object of the general obliquity of the joint is to enable the fore-arm to move towards the mouth, face, &c. with facility.

82. RADIUS, the external bone of the fore-arm; we may observe the following parts:—

i. Its CAPUT FIBULAFORME RADII, or button-like head of the radius, which is round, and, in fact, like an ancient button with a depression in the middle to receive *f*, the outer part of the articulating surface of the humerus, (6th 78.)

j. CERVIX RADII, or neck of the Radius, being that diminution in girth, which you observe immediately beneath its head.

83. TUBERCULUM RADII, or its tubercle; its *Form* is a globular process, and to it is attached the biceps flexor cubiti, (2nd 20).

k. A rough spine running from the tubercle obliquely downward and outward, into which the pronator radii teres, (1st 2), and the supinator, radii brevior, (4th. 44) are inserted

The shaft, or body is roundish in shape externally; internally, or towards the ulna, (6th 84), it is flat, having at *l*, a spinous edge for fixing the interosseous ligament, (5th 64). It is more bulky than the ulna, (6th 84).

There is a foramen (or hole) on its anterior flat surface, (above the number 82) for the passage of the medullary vessels and nerves*, *i. e.* those going to the marrow of the bone.

There are also various depressions, &c. arising from the pressure, origins, and insertions of the muscles, which are affixed to this bone.

Towards the lower part the radius becomes thicker, and on the face, (the anterior), which we now speak of, flat, and even in a degree concave, just above the articulating *surface*; and here at *m*, we observe a Fossa, (or long hollow) for the tendons of the flexor carpi radialis, (1st 2), and the flexor longior pollicis, (3rd 35), also more externally a more shallow and less defined fossa for the extensor ossis metacarpi pollicis.

n. Fossa Semilunaris Radialis, or semilunar cavity of the radius, the edge of which is seen in profile; it is lined with cartilage†, and in form adapted to receive the button-like head of the ulna, (6th 84, *v*), on which it rotates.

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* See Bayle and Hollard's Compendium, p. 113 & 14.

† Idem p. 115.

o. A flat uneven surface to which the external lateral ligament of the wrist, (5th 67), and the supinator radialis longior, (1st 1) are affixed.

p. **Fossa Navicularis Radialis**, or boat-shapen cavity of the radius, which is, in fact, two cavities divided by a ridge, for the articulating surfaces of the os naviculare, (6th 86), and os lunare, (6th 87) to play on, in effecting the flexion, and extension, and slight rotatory motion of the wrist ; the outer of these two cavities enclosed by cartilage, continues downwards and backwards, and becomes the

q. **Processus Styloideus Radii**, which is rough, and of a blunt irregular form.

84. **Ulna**, Cubit, or the inner bone of the fore-arm. Its upper end is large, and of an irregular wedge-shape, having the following parts.

Olecranon, (not seen in this view, but indicated in the diagram by the dotted line inclosing the letter *g*,) which is a process forming the posterior prominent part of the elbow.

85. **Processus Coronoideus**, or coronoid process, from its rude similitude to a crow's beak ; to it is attached the capsular liga-

ment, (5th 60). Between these two processes is the

FOSSA SIGMOIDA MAJOR, (part of it indicated by the dotted line surrounding the letters *g*, *e*, and *d*), greater sigmoid, or semilunar cavity, which is in form exactly adapted to the internal part of the articulating surface of the humerus, (6th 81), with this bone, and has a *ridge* running from before backwards, opposite the middle depression in that bone, and two cavities opposite the protuberances (*e* and *d*), of the same bone ; there are therefore, in fact, two cavities, the outer small and the inner larger, instead of one, which are divided by a ridge or rib.

r. FOSSA SIGMOIDA MINOR, or smaller sigmoid cavity. It receives the button-like head of the radius *i*, being adapted to that part, that the radius may freely rotrate on it, to effect the pronation and supination of the hand ; it is covered thickly with cartilage.

s. TUBERCULUM ULNÆ, or tubercle of the ulna, (6th 84), a small rough elevation, to which brachialis interus (3rd 32), is attached.

The shaft or body of this bone is of a triangular form, the anterior face of which, *t*, is wide at top and narrower below, and terminates in a rounded form : the external face *u*, is seen in profile, it is very rugged and irregular at the upper part, but at the lower more smooth, and is in some degree blended into the roundish form of the anterior face, *t*, to it is attached the inner side of the interosseous ligament, (5th 64) ; the bone, after diminishing much in girth at the lower end, again swells out and ends in

v. CAPUT FIBULAFORME ULNÆ, or the button-like head of the ulna, articulating with the semilunar cavity of the radius, *n* : its form is evident, and from it proceeds

w. PROCESSUS STYLOIDEUS ULNÆ, or styloid process of the ulna, from which a strong ligament, seen in the back view of this part, (Part II) is sent off to be attached to the bones of the wrist.

The anterior surface of this bone, *t*, is marked by the origins, insertions and pressure of muscles, &c., and there is generally observed, an oblique foramen, or hole for the vessels, and nerves of the marrow to pass through.

We now come to the bones of the CARPUS, or wrist, which are eight in number, disposed in two rows, each bone being broader on its posterior than anterior surface, and thus forming an arch, which is, as you perceive concave in front, producing strength of structure, and convenient security for the muscles, blood vessels, nerves, &c., passing downward to the fingers; all these bones are covered with cartilage to facilitate motion, that this is the object is evident from the

Triangular Cartilage serving that purpose so well, and its never ossifying as other cartilages in old persons frequently do.

It is not shewn, but is placed in the interval, between the button-like head and styloid process of the ulna, (6th 84, *v* and *w*), and the upper surface of the os lunare, (6th 87), being most firmly attached to the former bone.

It is not thought necessary to give a description individually of the forms, &c. of the bones of the carpus, as that will be sufficiently understood from seeing them anteriorly and posteriorly, and being informed of their names.

The FIRST ROW *of the* CARPAL BONES.

86. Os NAVICULARE, or boat-shapen bone, also Os SCAPHOIDES.

87. Os LUNARE VEL SEMILUNARE, or moon-shapen bone.

88. Os CUNEIFORME, or wedge-shapen bone, also, Os TRIQUETRUM.

89. Os PISIFORME vel orbiculare.

The SECOND ROW *of the* CARPAL BONES.

90. Os TRAPEZIUM, being nearly that figure.

91. Os TRAPEZOIDES, from being somewhat like the Trapezoid.

92. Os **Magnum**, largest bone of carpus; also Os **Capilatum**.

93. Os **Unciforme**, so named from the unciform, or hook-like process, *x*, proceeding from it.

The **Metacarpus**, or bones beyond the wrist, are five in number, four devoted to support the fingers, and one for the thumb, their posterior surface more round than the anterior, which has a spine running down the middle of each, bifurcated above and below; they have also slight lateral spines for the small interosseous ligaments to be affixed to ; they have each *y*, a base which is irregular in form, but having an articulating surface, exactly corresponding in figure with the part of the carpal bone, or bones which it is attached ; *z*, a head which is ball-shaped, thus allowing lateral, as well as ginglimoid, or hinge-like motion. They are

94. Os **Metacarpalis Pollicis**, or metacarpal bone of the thumb, which is flatter than those of the fingers, and is articulated with os trapenium, (6th 90). And

95. **Ossa Metacarpales Digitorum**, or the metacarpal bones of the fingers, and of which we may observe that the one supporting the index or fore-finger, marked

1, is articulated with Os **Trapezoides**,(91).

II. Middle finger is articulated with **Os Magnum**, (92.)

III. Ring Finger, } are ditto ditto **Os Unciforme**, (93.)
IV. Little Finger }

Those bones, supported by the metacarpal bones, form the bony structure of the thumb and fingers, and from being arranged in rows, are termed "**Phalanges**," each phalanx forming one of the rows of what are commonly called joints. Each of the bones forming the phalanges, has, like the bones of the metacarpus, a base, shaft or body, and head, on which we observe ridges and rugosities, formed for the attachment of the capsular, lateral, annular and other ligaments, the insertion of the tendons of muscles, and by the pressure of muscles and other parts.

The thumb has two phalanges,

96. 1st, **Phalanx of Thumb.**
97. 2nd, ditto ditto.

Each of the fingers has three phalanges.

98. 1st, **Phalanx of Fingers.**
99. 2nd, **Phalanx of Fingers.**
100. 3rd, **Phalanx of Fingers.**

We also observe at the end of the last phalanx of the thumb, (6th 97), and fingers, (6th 100), a rough and irregular crescent-shapen prominence, to which the vascular, and pulpy nervous substance of the points of the fingers and thumb is attached anteriorly and beneath, and the nails posteriorly, of which we shall speak in the next part.

END OF THE FIRST PART.

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